MAY 1989

AUTOMOTIVE INDUSTRIES

SINCE 1895

AUTOMAKING, SOVIET STYLE

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CHILTON'S AUTOMOTIVE INDUSTRIES

SINCE 1896

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Cover art by Randy Hamblin

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AUTOMAKING

We go back in the USSR to see how a massive modernization program is transforming the Soviet automotive industry.

by PAUL LIENERT

The spanking new Moskvich Aleko whisked us through a yard littered with half-opened crates of new machinery, many labeled with such familiar names as Ex-Cell-O and Liebherr. In mid-February, snow covered most of the unprotected equipment awaiting installation in the refurbished Moskvich factory, while some older, abandoned pieces lay rusting in the adjacent yard.

Suddenly, a red fire truck raced past with lights flashing, and tore through a side entrance of the plant. Our driver seemed unconcerned as we continued our tour—through a back door, up a serpentine ramp to the second story of the aging, dimly lit main assembly building.

Later, we encountered the fire truck again, this time parked on the first floor near a smoldering paint machine. Plant manager Valery Sokolov jumped from the car and walked over to talk to one of the asbestos-suited firefighters. Then he climbed back inside with us, and with a shrug, continued his description of the plant.

LENIN KOMSOMOL AUTOMOBILE PLANT (AZLK)

A visit to the Lenin Komsomol Automobile Plant in Moscow is a study in paradox: One of the Soviet Union's oldest auto factories, it will soon be one of the industry's most modern facilities when an unprecedented billion-ruble renovation is completed in the early 1990s.

"When we have the new machinery in place, there will be only one plant in the world as modern as ours," boasts Sokolov, deputy general director and production boss at Automobilny Zavod imeni Leninsky Komsomola (AZLK). "That will be the General Motors Saturn plant."

Asked for his source of knowledge on Saturn's production methods, which have been one of the US industry's best-kept secrets, the slender, gray-haired Sokolov replies with a trace of a grin: "I can't tell you. That's classified."

Modernization of the main assembly plant and construction of a new engine plant, most of it funded by the state, has been a major undertaking for AZLK. The expense of retooling is

enormous, compared with the sums spent by the Volga Auto Works, which produces nearly five times as many cars. Machinery is still being ordered from Western European and Japanese suppliers; the plant, when completed, will have a dazzling array of more than 500 robots, according to Sokolov, with a level of automation previously unheard of in the Soviet automotive industry. Total investment is expected to approach $1.5 billion.

"Our home market does not require this level of automation," Sokolov observes. "But if we are to export, we need to build cars with world-class quality."

With the Soviet auto industry in the midst of a massive modernization drive, the five principal automakers last year built only 1.1 million cars, well below their average annual output since 1980 of 1.3 million. The tally was about equal to Chrysler Corp.'s 1988 auto production and only a fraction of the seven million cars assembled last year in the US.

The Soviets would like to export more cars, too, to gain hard currency to help finance their expansion, but the domestic appetite for automobiles appears to be insatiable. According to the best estimates, there are a mere 50 cars on the road for every 1000 citizens in this country of 280 million. At the current rate of production, the Soviets should catch up to the US average of one car for every two persons by the year 2100.

Until it can satisfy local demand, the Soviet industry isn't likely to launch a major export push in the West. Although prospective distributors, including New York-based SATRA Corp. and Oregon megadealer Ron Tonkin, are already lining up to secure US distribution rights, it may be 1995 before Russian-built cars appear on American streets in any significant numbers. And when they finally arrive, it's a good bet the first model off the boat will be a Lada.

VOLGA AUTO WORKS (VAZ)

If the Moskvich plant appears to Western eyes to combine elements of the old Dodge Main complex and the

FROM "THE GM OF THE USSR" TO THE REAL THING

Dr. Moisey B. Shkolnikov is a senior structural engineer with B-O-C in Troy, MI. He was formerly with NAMI, the Soviet Union's major automotive research institution. We asked him to comment on his experiences in both auto industries.

Dr. Moisey B. Shkolnikov

"It was a pleasure to learn from Paul Leinert's article of the progress being made at VAZ both in production and welfare of employees. Extremely high by the USSR standards, monthly income up to 1200 rubles and company cars for middle managers are nice achievements. It is really difficult for me to compare the USSR working environment of the early '80s with GM's in the late '80s, as I left the USSR in 1981. All automotive companies, including VAZ, were subsidiaries of the Ministry of Automotive Industry.

"There was no competition between the companies. Job security was guaranteed. The lack of computers and software available slowed down the advancement of engineering technology and design. Nevertheless, many automotive institutions, including NAMI, were conducting a lot of R&D. It might be that the situation has improved since then."

TOURING VAZ: A WHOLE LADA CARS

Nestled at the foot of the scenic Zhiguli Hills, Togliatti is the home of the massive Volga Auto Works, the country's newest – and by far the largest – automaker.

The factory complex was built in the late 1960s with the aid of Italian auto giant Fiat, while the city itself was named in honor of the founder of the Italian Communist Party. Ground was broken for the plant in January 1967; the first car, a Fiat 124 derivative, rolled off the line in April 1970.

VAZ (Volzhsky Avtomobilny Zavod) now produces several different models, including updated versions of the original Fiat designs, which are sold under the Lada and Zhiguli brand names. The factory also makes the Niva compact utility vehicle, and two years ago introduced a new front-drive series called Samara. Last year, it began pilot production of the new Oka minicar.

Although the Samara is only two years old, the factory already is working on a replacement for the early 1990s, including a high-performance 16-valve version, and a full range of body styles. VAZ also is discussing local production of automatic transmissions, and other components for the new range, with GM.

"We believe this model will take us to the 21st century," says Dr. George Mirzoev, VAZ chief design engineer.

Once every three minutes, a new car rolls out the door. Some 2600 vehicles are completed each day and shipped to destinations around the globe. In 20 years, the factory has assembled over 12 million cars.

VAZ still relies heavily on manual labor in much of its operations. Throughout the plants, pockets of workers, many in their mid to late 20s, gather informally to chat over tea break; in the middle of one dimly lit assembly area, two workmen enjoy a hotly contested game of ping-pong on a battered table. Signs of Western pop culture are evident; a row of machinery in one plant bears hand-lettered names of rock groups Led Zeppelin and Whitesnake.

Hourly employees at VAZ typically work a nine-hour shift five days a week, with a daily 48-minute lunch break. They earn an average of 250 roubles a month (about $2.50 an hour, or $5000 a year) in salary and bonus. Skilled trades are paid slightly more, while senior officials can earn up to 1200 roubles a month (about $24,000 a year), including incentives and bonuses. Middle and top managers get a company car; top executives get a driver. Employee benefits are numerous. – *PL*

VAZ's Lada Samara (left), launched in '87, and new AZLK Aleko, both front-drivers.

1988 AUTOMOBILE PRODUCTION IN THE USSR
by automaker

VAZ	AZLK	GAZ	ZAZ	IZH	TOTAL
720,000	120,000	75,000	150,000	50,000	1,115,000

Source: Avtoexport.

TOURING AZLK: FROM MODEL A TO ALEKO

The Lenin Komsomol Automobile Plant in Moscow (Avtomobilny Zavod imeni Leninsky Komsomola, or AZLK) has evolved over the past 60 years into one of the USSR's most modern auto plants.

Established with financial and technical assistance from Henry Ford in 1930 as the Young Communist International Auto Plant (KIM), the factory assembled a version of Ford's Model A using mostly American-built parts, as well as Ford-based trucks through the 1930s. Reorganized in 1939 as the Moscow Light Automobile Works (MZMA), the plant produced its first original design, called KIM-10, in 1940 before being converted to a military vehicle repair facility during World War II. In 1947, the factory introduced a new Opel-based sedan with the Moskvich brand name; exports to Western Europe began in 1949.

The plant was overhauled in 1968 and renamed AZLK to mark the 50th anniversary of the Lenin Komsomol (Young Communist League).

When the current modernization of the plant, which has converted to assembly of the new Aleko compact, is completed, the complex will house more than 7.5 million ft^2 of production and technical facilities on 700 acres, including a design and engineering center and a small test track.

The Aleko, which was developed in conjunction with Renault, eventually will spawn a family of vehicles, including a small van and a pickup. AZLK will produce about 120,000 vehicles this year and 160,000 in 1990, and anticipates annual production at the home plant and satellite locations will reach 300,000 by the year 2000. The factory also has signed cooperative agreements with plants in Bulgaria and Czechoslovakia to assemble future versions of Aleko, and expects to begin exports this spring to Western Europe for the first time in nearly 20 years.

"This won't be a big step forward in the world market," concedes Sokolov, "but it will help improve our image in the West. It is not our strategy to conquer the world."

The Moscow plant employs about 25,000, half of whom are women. Posters placed strategically throughout the plant exhort workers to maintain high levels of quality, praise outstanding employees, honor past officials and even warn against possible AIDS contamination in Red Cross blood donations. Most workers greet visitors with a studied air of nonchalance.

A 40-hour work week is the norm, with the typical production worker earning about 240 roubles a month (about $4700 a year) in salary and bonus. Workers are provided with extensive subsidized health care, child care, housing and cultural/sports facilities. – JJ

new GM Poletown facility, the sprawling Lada complex in Togliatti, about 600 miles southeast of Moscow, may be Russia's answer to the Ford Rouge complex.

Here, the Volga Auto Works operates the world's largest auto plant, producing nearly 90% of its own components on-site. It is not without a trace of envy that officials at other Soviet automakers often refer to the company as "the General Motors of the Soviet Union."

As the country's leading vehicle manufacturer, Volzhsky Avtomobilny Zavod (better known by its acronym VAZ) builds more than half the cars produced each year in the USSR. About 720,000 units a year roll off its three assembly lines, and 45% are exported to sister Comecon countries and the West. VAZ employs 95,000 workers in its automaking operations and another 25,000 in affiliated industrial enterprises.

Everything here is done on a grand scale. The main VAZ complex encompasses nearly 2½ square miles, with production facilities totaling 22.5 million ft^2. Operations include a foundry, stamping plant, engine and transmission assembly plant, body assembly plant, machine tool and die shop, administration building and a new $800-million technical center that will house R&D, engineering, design and a pilot assembly line.

Much of the original machinery, including the huge 20-year-old Innocenti presses, is still in use, although VAZ is gradually replacing worn-out equipment with more modern machines, many of Japanese design. An affiliate, called AutoVAZ, is even building its own presses and robots under license from Western firms, supplying them to other Soviet automakers.

By Western standards, the plant is barely automated; only 80 robots are employed, mostly for welding and subassembly, although painting operations are expected to be automated in the near future.

VAZ is also a principal figure in the Soviet government's ambitious program to double domestic auto production during the next decade. VAZ has teamed up with the country's largest truckmaker, KamAZ, to create the first in a series of low-priced "people's cars" which the Soviets hope to mass-produce in the 1990s at a new complex

in Yelabuga, on the Kama River just east of the Ural Mountains. The tiny Oka hatchback, which sells for 3500 rubles ($5775), is being produced in limited quantities at both plants while the Yelabuga plant, once earmarked for tractor production, is being constructed and equipped.

"Our intention [with the Oka] is to meet the demand for young, low-income families," says Dr. George Mirzoev, chief design engineer at VAZ, which developed the car. VAZ will supply components and machinery for the Yelabuga plant, which will be built in stages. Ultimately, the Soviets hope to produce up to a million cars a year at the facility, including larger, more powerful derivatives of the Oka.

In addition to its own projects, VAZ is supplying components and some technical assistance to the Zaporozhye Auto Works (ZAZ) near the Black Sea for its new front-wheel-drive Tavria hatchback. The ZAZ plant continues to produce a tiny rear-engine model, similar to the German NSU, called Zaporozhets, but expects to convert production completely to the newer Tavria model by 1990. Annual output is about 150,000 units – nearly all of it for Soviet consumption – although Tavria exports will begin later in '89.

GORKY AUTO WORKS (GAZ)

The Gorky Auto Works (GAZ) has made headlines in the West for its negotiations – subsequently unsuccessful – with Ford Motor Co. GAZ had hoped to replace its aging Volga sedan, used widely by Soviet taxi fleets, with a version of the European Ford Scorpio. One hitch was whether Ford would permit the Gorky plant to export cars to the West in exchange for hard currency, which it sorely needs to pay for renovation and modernization of tools and equipment.

Gorky's ties with the US automaker date to the early 1930s, when Henry Ford helped construct the factory and supplied parts and the design for the Model A, the first mass-produced automobile in the Soviet Union. (The Gorky plant was designed by Detroit architect Albert Kahn.)

The plant continues to produce the Volga, whose basic design dates to the 1950s, and limited numbers of the big Chaika sedan, which it hopes to update in 1990. Production meanwhile has fallen from a peak of 150,000 in the early 1980s to around 75,000 last year. GAZ is also a major supplier of medium trucks, building more than 300,000 in 1988.

There are several factors which have prevented the Soviet automotive industry from evolving into a global powerhouse to rival the US or Japan, including a cohesive central plan for the industry and lack of domestic or foreign competition within the state-controlled economy.

"The history of the Soviet auto industry is such that each plant developed separately," notes Alexandr Zvegintzev, deputy director of Autoexport, the Moscow-based foreign trading firm which has served since the mid-1950s as the link between the Soviet industry and the West.

"A distinguishing feature of Soviet automakers is that each plant produces most of its own components. In the absence of competition, the companies were not forced to look for ways to reduce costs, such as developing common components. Consequently, there are no big independent parts suppliers, such as Bosch and Lucas in Western Europe."

Previously, all automakers had to return their profits to the state, which in turn allocated funds for new tooling and development of new models. Under new regulations, the auto companies are now allowed to keep 40% of their profits to plow back into operations.

They are also being given a greater degree of autonomy; starting April 1, all vehicle manufacturers gained the right to negotiate their own export programs and ventures with foreign firms. AI

AUTOMOTIVE INDUSTRIES: TO RUSSIA, WITH LOVE

In 1972, the capitalist media barons of the Chilton Company granted Mashinostroenie Publishers, Moscow, USSR, the rights to publish a Russian language version of *Automotive Industries* in the Soviet Union. The relationship continues today.

The Russian *AI* is not exactly as slick as our original. It's devoid of color and advertising, and you can almost feel the wood pulp in the paper. Artwork is lifted right off of the original pages and screened, giving everything a 'Siberian winter' appearance.

When Paul Lienert showed some copies to people in the Soviet auto plants, there was much fascination. Obviously, Paul says, many had never seen the magazine, and were astonished that such a publication exists in their own language. Perhaps upper management types keep the *AI's* to themselves – after all (to paraphrase Orwell), all autoworkers are equal, but some are more equal than others.

At least our Russian editor gives his exploited American comrades our bylines. Set in Cyrillic type, Cathy Coffman is К. Коффман, Gerry Kobe is Дж. Коуб and I'm Л. Брук.
Go figure. – *Lindsay Brooke*

AUTOMAKER QUARTERLY REPORT

First quarter '89: Domestics slip while imports gain.

by Dr. THOMAS O'GRADY

Both the passenger car and light truck markets weakened during the first quarter of 1989, despite frequent extensions and additions to most incentive programs. The heaviest losses during the quarter came from "traditional" domestic cars, European models, and Korean imports. Yet transplants and Japanese imports increased their passenger car shares.

GM's total passenger car share dropped from 37.6% in the first quarter of 1988 to 35.4% in early 1989. Of the five GM divisions, only Pontiac and Cadillac managed to maintain or increase their market share so far this year. Chrysler's share of the passenger car market also fell during the first quarter, with sales suffering most in the small through mid-size segments. Chrysler now must fill in gaps in several markets.

Ford's total volume is also down for the quarter, but its market share did rise from 21.7% in early '88 to 23.3% in early '89. Both the Crown Victoria and Taurus/Sable weakened in their markets during the first quarter.

Dr. Thomas O'Grady heads Integrated Automotive Resources, Inc. in Wayne, PA.

Among foreign manufacturers, Honda, Nissan, Subaru and Toyota each gained market share during the first quarter. The expansion of North American Civic, Sentra and Corolla production since early 1988 has impacted market share the most.

The Ford Escort regained its position as the best-selling car in the US, after dropping to second place against the Honda Accord at the close of '88. The Honda Civic, both imported and US-built models, was the only first-time addition our Top Ten list. Several of 1988's best-selling import models dropped out of the first quarter list, including Toyota's Camry and Corolla models and the Hyundai Excel. Look for Camry and Corolla to return to the list later in the year as Toyota's domestic assembly facilities increase production. AI

WHAT'S HOT! Domestic Auto Sales 1st Quarter 1989

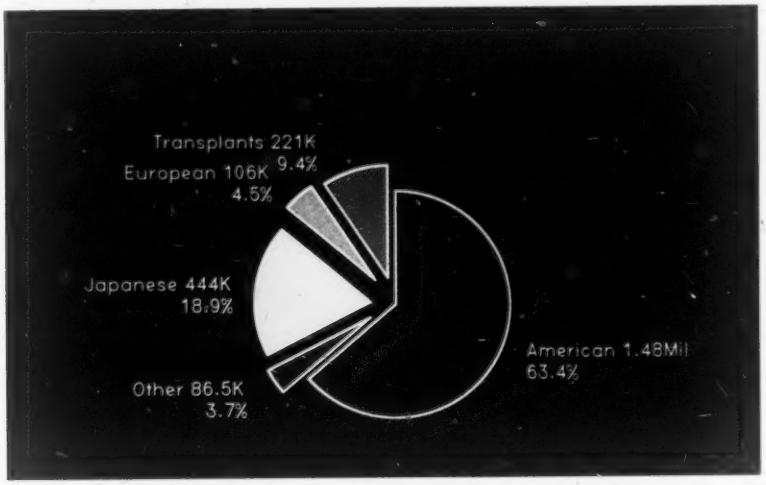
Carline	'89	'88	% Change
Escort	87,918	92,059	(4.50%)
Corsica/ Beretta	86,767	101,120	(14.19%)
Taurus	83,275	101,901	(18.28%)
Cavalier	72,862	71,347	2.12%
Accord*	72,254	78,061	(7.44%)
Sentra*	62,376	56,836	9.75%
Tempo	59,783	72,250	(17.26%)
Celebrity	57,136	71,288	(19.85%)
Civic*	50,880	42,360	20.11%
Ciera	48,757	59,451	(17.99%)

* - Includes imports
( ) - Negative value

US Passenger Car Market Shares, 1st Qtr. 1989

Manufacturer	Sales	% Total
General Motors	829,986	35.42%
Ford	546,068	23.31%
Chrysler	247,955	10.58%
Honda/Acura	163,512	6.98%
Toyota	143,081	6.11%
Nissan	125,402	5.35%
Mazda	54,120	2.31%
Hyundai	49,691	2.12%
Subaru	37,778	1.61%
VW/Audi	34,338	1.47%

(Continued p.78)



Passenger Car Market Share By Geographic Base

First Quarter 1989

Manufacturers	Total Sales	Total Market Share
American	1,483,790	63.33%
Japanese	444,771	18.98%
European	106,430	4.54%
Transplants	221,554	9.46%
Other Imports	86,578	3.69%
Total	**2,343,123**	**100.00%**

1ST QUARTER 1989 DOMESTIC LIGHT TRUCK PRODUCTION

COMPANY	FULL-SIZE TRUCKS	COMPACT TRUCKS	FULL-SIZE VANS	COMPACT VANS	FULL-SIZE SPORTS UTILITY	COMPACT SPORTS UTILITY	TOTAL 1Q '89	TOTAL 1Q '88
FORD	184,880	94,531	64,133	61,493	24,021	35,956	465,014	451,557
CHEVROLET	153,765*	80,529	42,279	44,830	35,012	41,156	397,571	342,827
CHRYSLER	28,586	28,604	28,163	135,661	---	---	221,014	198,601
GMC	48,210*	20,855	15,052	11,034	11,337	11,329	117,817	119,856
JEEP	---	8,937	---	---	4,306	80,248	93,491	78,325
NISSAN	---	35,030	---	---	---	---	35,030	33,613

*Includes Suburban and P-model